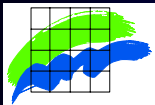


Workshop input: Information needs

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A: What are the key species?

- **Those avian species/populations:**
 - which enjoy special protection measures
 - for which the area is important at some stage in the life cycle
 - vulnerable to windfarms
 - that exhibit high annual adult survival and low reproductive output (MARK DESHOLM's poster)

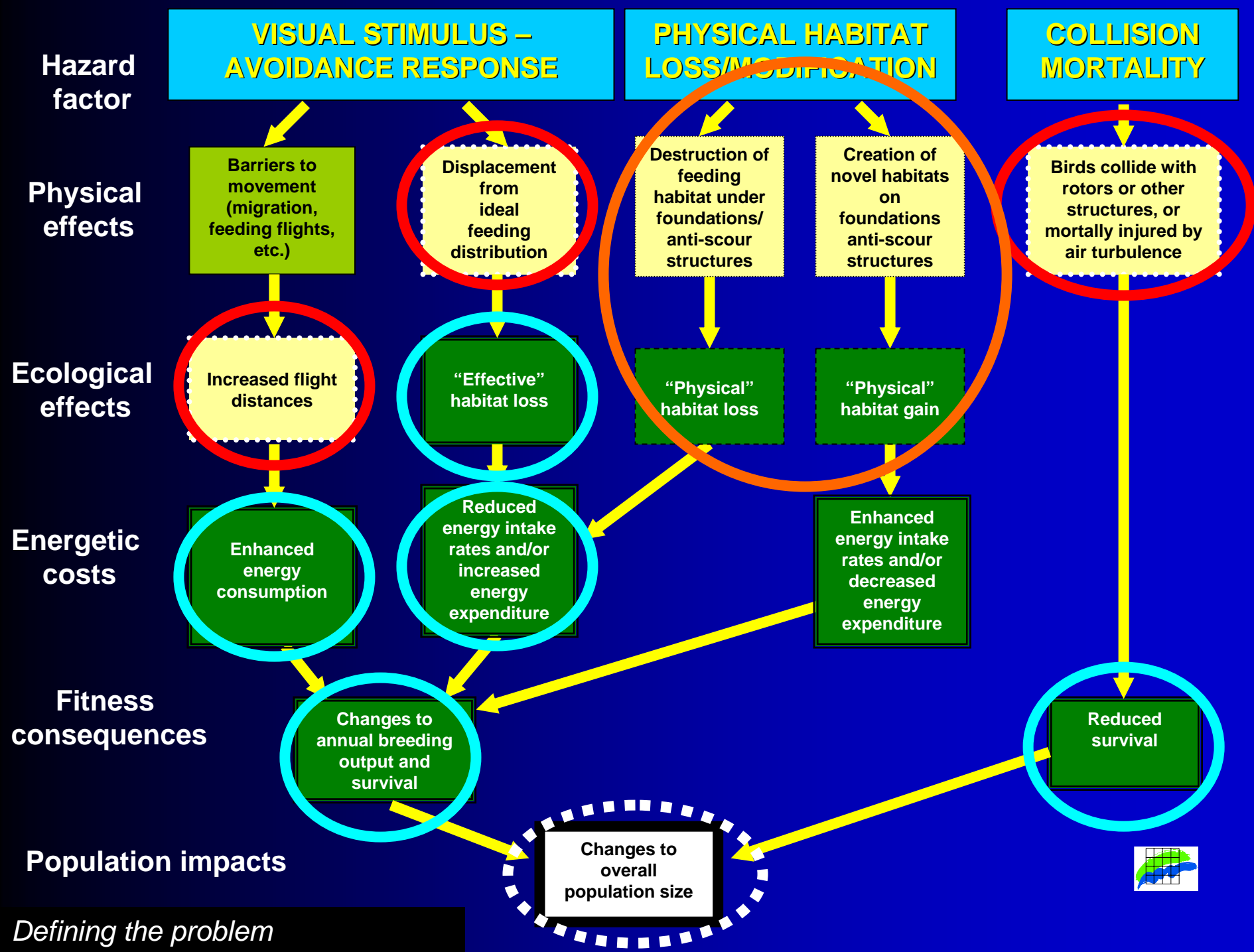




B: What are the hazards?

- Developed a conceptual framework for all bird species





Some thoughts:

- We need to establish a logical framework for species/populations of concern for each development



Some thoughts:

- Our approach has been to measure:
 - (i) flight avoidance (RADAR)
 - (ii) effective habitat loss as a result of avoidance of feeding close to turbines (DISTRIBUTIONAL SURVEYS)
 - (iii) parameters relevant to the construction of probability models to predict actual collision risk (RADAR/TADS)
 - (iv) actual collision rates of the species involved (TADS)



Some thoughts:

- Our research continues and we shall report next year, but in the meantime, preliminary results:
 - suggest some seaducks show flight avoidance
 - show that some seaducks will not feed between turbines
 - that studied species avoid flying in close proximity to turbines
 - no collisions have been detected during 30+ days and nights of monitoring during the most intense migration periods



Some thoughts:

- For cumulative impacts we need to use:
 - (i) models to establish costs of flight avoidance and assess energetic consequences
 - (ii) individual based models to assess consequences of habitat loss and disturbance
 - (iii) population models to establish the impact of collision mortality on populations



But more than this....

- We need a great many more worked examples in order to pool knowledge and understand vastly more about different species reactions under a wider range of ecological and meteorological conditions
- We need to establish common standards and harmonisation of approach in order to combine experiences to best effect
- We need a recognised forum to exchange and share information and experiences
- In particular, we should try and secure some means of global information dissemination

